

Water Boards' Actions to Protect Beneficial Uses in the Delta



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Delta Team

Presentation Outline

- Interagency Ecological Program (IEP)
- Pelagic Organism Decline (POD)
- Water Board Bay-Delta Team
- Strategic Work Plan Actions

Interagency Ecological Program (IEP)

- State & Federal Agencies
- Monitoring Since 1971
 - ◆ Biological assessment
 - ◆ Water quality

Pelagic Organism Decline (POD)

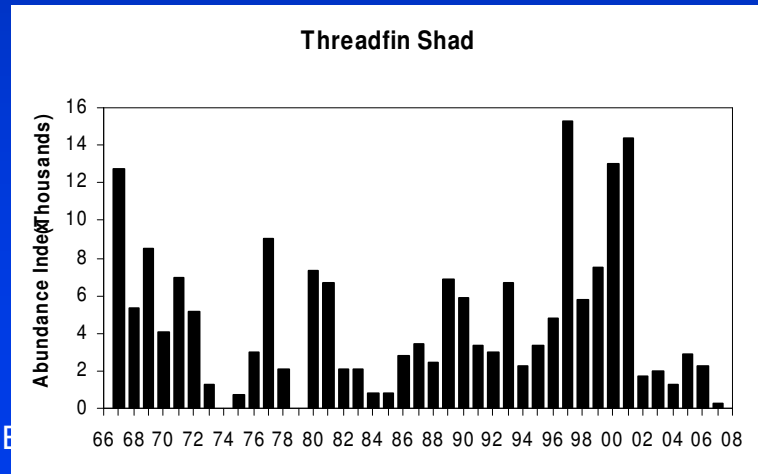
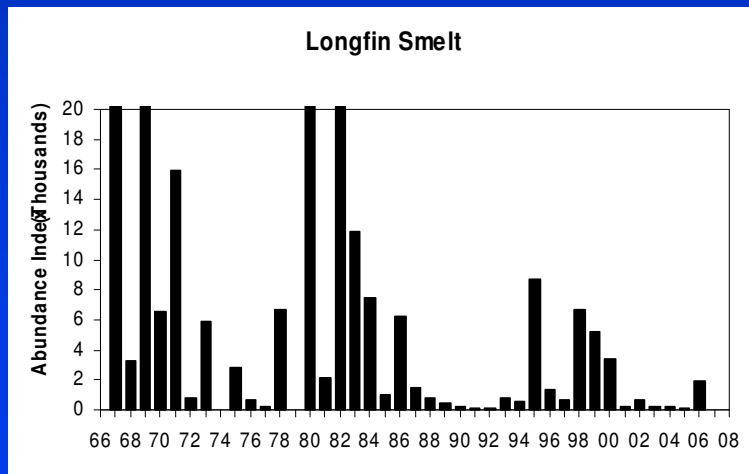
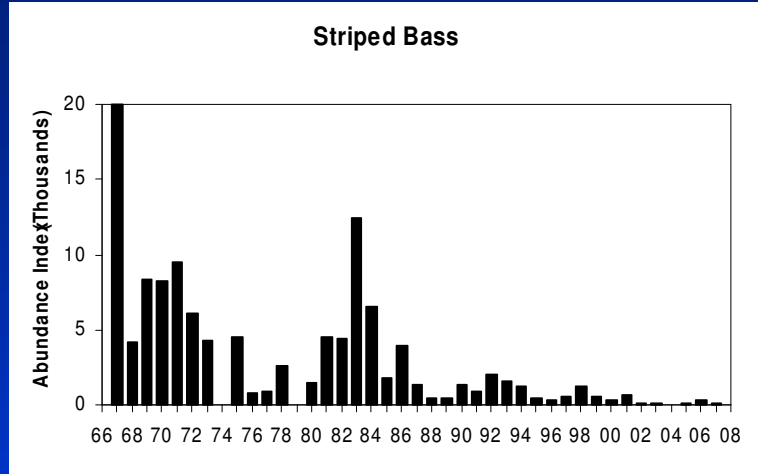
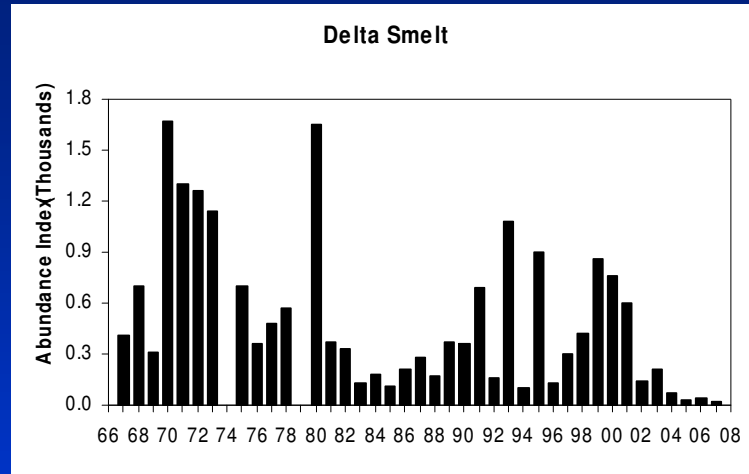


Threadfin shad

Striped bass

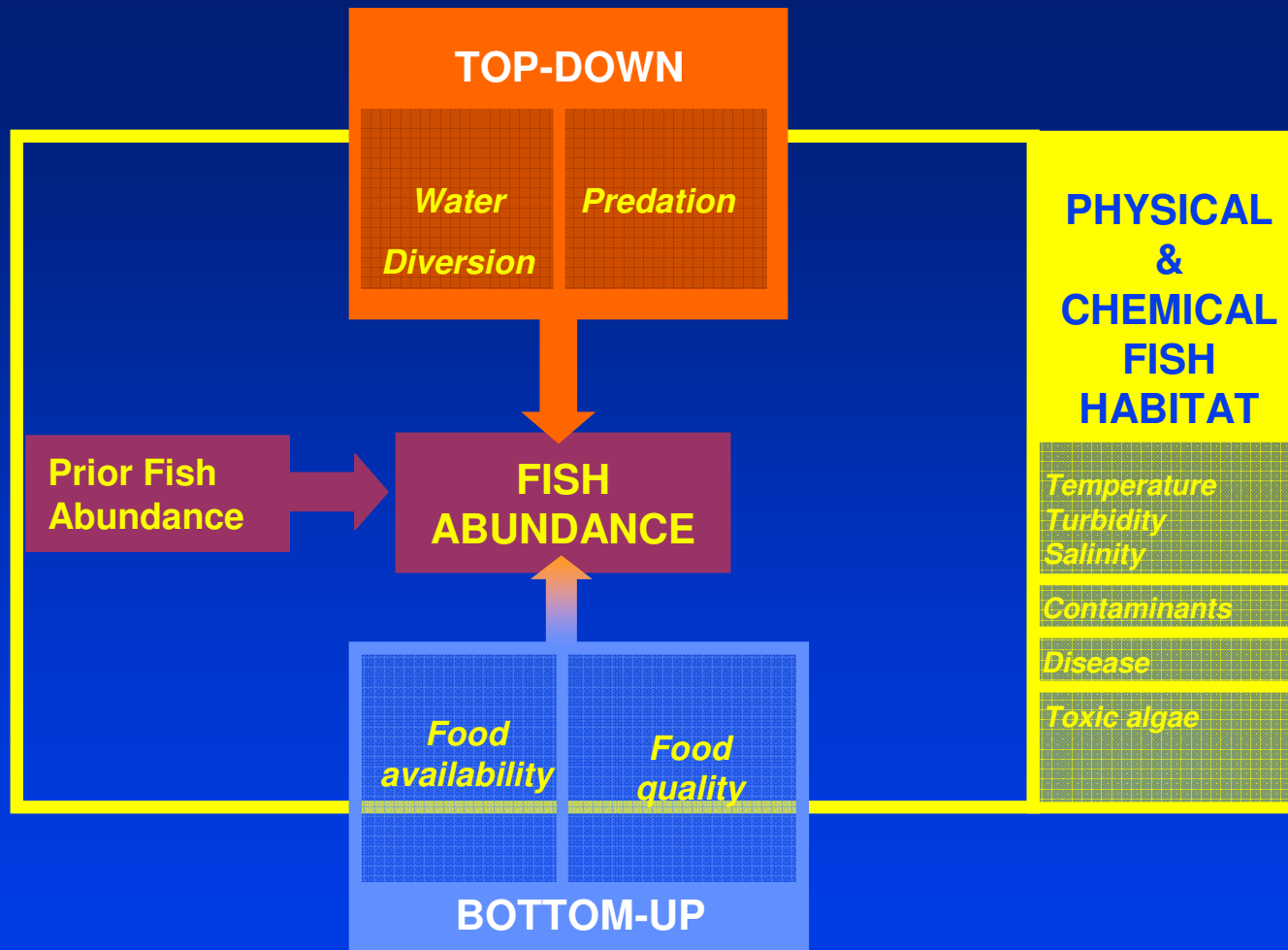
Fall abundance in 2007 continued to decline for all POD fishes.

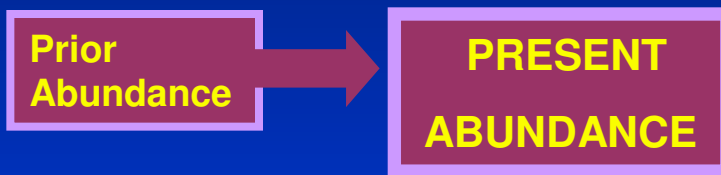
Source DFG 2007 Fall MW Trawl
No sampling 1974 and 1979



2005 Studies

- 3 Suspects
 - ♦ Contaminants
 - ♦ Exports
 - ♦ Invasive species
- What changed?
- How & why did the change occur?
- Could the change effect populations of pelagic fish?





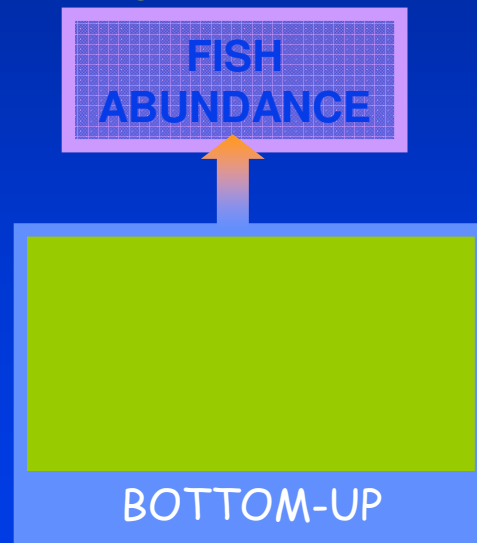
- Gear Efficiency Studies (DFG)
- Video Sampling of Pelagic Fishes (USBR,DWR)
- Expanded 20 mm Survey Larval Monitoring (DFG)
- Pelagic Fish Population and Egg Supply Estimates (DFG/USFWS)
- Longfin Smelt Population Dynamics (DFG/DWR)
- Statistical Analyses of Fish Abundance Trends (USBR/Manly)
- Delta Smelt Growth and Survival (UCD)
- Delta Smelt Stock Structure (UCD)
- Delta Smelt Genetics (UCD)

TOP-DOWN

FISH
ABUNDANCE

- Effect of Fish Behavior on Entrainment Risk (DWR)
- Clifton Court Circulation Patterns & Loss (USFWS)
- Effects of Hydrodynamics on Fish Salvage Trends (USGS)
- Particle Tracking Simulations of Entrainment (Consultants)
- Effects of Inshore Predators (UCD)
- Statistical Analyses of Salvage Data (DWR, USBR, Manly)
- Power Plant Studies (Mirant, Tenera, Hanson)
- Salvage History (DFG, USBR)
- Modeling Striped Bass Predation in the Estuary (DWR/DFG)

- Zooplankton and Phytoplankton Trends (DWR/UCD)
- Zooplankton Community Structure (SFSU)
- Delta Smelt Feeding on Zooplankton (SFSU)
- Sources of Food Web Disruption (SFSU/UCD)
- Changes in Benthic Biomass and Abundance (DWR)
- Fish Diet and Condition (DFG)
- Effects of Nutrient Ratios on Phytoplankton (SFSU)
- Phytoplankton Community Changes (DWR)
- Zooplankton and Organic Carbon Quality (UCSD)



- Temporal and Spatial Changes in Habitat (UCD)
- Effects of Cache Slough Complex on Delta
- Habitat (DWR, USGS)
- Turbidity Sources and Signals (USGS)
- Climate Effects (USGS)
- Hydrologic Changes (USGS)
- Microcystis Effects on Threadfin Shad (UCD)
- Salinity Effects on Clams (SFSU)
- Contaminants Synthesis (RWQCB)
- Wastewater Effects on Phytoplankton (SFSU)
- Screening Wastewater Effects on Smelt (UCD)
- Pyrethroid Monitoring (UCB)
- Fish Tissue Selenium Analysis (DFG).

**PHYSICAL
&
CHEMICAL
FISH
HABITAT**

Synthesis

- Delta smelt life cycle and individual-based models
- Striped bass life cycle, individual-based, and dose-response models
- Statistical analysis of environmental effects on pelagic fish abundance
- Synthesis and evaluation
 - ♦ http://www.waterrights.ca.gov/baydelta/docs/pelagicorganism/pod_ieppodmt_2007synthesis_011508.pdf

Bay-Delta Team

- State Water Board
- Central Valley Regional Water Board
- San Francisco Bay Regional Water Board

Delta Actions Resolution

- Lists actions
 - ◆ Existing commitments
 - ◆ New actions
- Directs staff to develop a strategic work plan
- Directs staff to seek stakeholder input

Existing Commitments

- Salinity management plan
- TMDL development & implementation
- Central Valley drinking water policy

New Actions

- Regional monitoring program
- Delta island monitoring
- Evaluate effects of ammonia
- Evaluate need for increased enforcement on in-Delta pesticide use
- Evaluate effects of power plant diversions

Regional Monitoring Program

- Advantages & disadvantages
- Scope
- Management
- Goals & objectives
- Coordination
- Resources

Delta Island Drainage Monitoring

- Scope
 - ◆ Number of islands
 - ◆ Parameters

In-Delta Pesticide Use

- What could or should be done to ensure that pesticides used on lands in the Delta and upstream watersheds are not impairing beneficial uses?

Assess Potential Effects of Ammonia

- Long-term studies
- Stakeholders' role in studies
- Ammonia summit

Evaluate Potential Impacts of Power Plant Diversions

- What additional information is needed to address power plant diversions?

Next Steps

- 19 March State Water Board Workshop
- 23-24 April Central Valley Water Board Meeting
- June Water Board Meetings

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